



DIVISION OF HEWLETT-PACKARD

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August 29, 1966

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U. S. Atomic Energy Commission Isotopes Branch Division of Materials Licensing Washington, D.C. 20545

Attention: Mr. J. Bell

Dear Mr. Bell

Further to our phone conversation on August 18, 1966, I have listed the information requested by you concerning our proposal to manufacture and distribute Ni63 cells.

Cell Dimension

Approximate dimensions of the nickel cell are: 1 inch diameter and 1-3/8 inch length (excluding gas connection tubes). These dimensions are very similar to our present cells 2-2830 and 2-2837.

Heat Sink

The aluminum heat sink to enclose the cell is very similar to that used in our tritium detector. However it is reduced in size (to $2-3/8 \ge 2-3/8 \ge 1-1/4$ "). Insulation is wrapped around this heat sink which is then covered by a thin metal outer container. The label is fixed to the outer surface of this container.

Labels

It is possible that some fading may occur to the caution label at the temperatures reached, although information at this time indicates fade will be at a minimum.

Leak Test

This is performed with F & M Leak Test Kit No. P 6761 which includes the following parts:

- a) twelve pieces of paper for parforming wipe tests only three will be used at any one test.
- b) twelve envelopes three used for one test.

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- c) four postal envelopes addressed to U. S. Radium for the customer to return the wipes to U. S. Radium.
- d) A form detailing: cell serial number, model number, date loaded, date wipe tests are due (six months after loading date), and wipe test count.
- e) Service Note 5663A-2 details how wipe test is performed detailed in letter from J. Peters to J. Bell on July 20. Wipe test results will be reported to the customer as microcuries for his record keeping. We are suggesting that U. S. Radium perform these wipe tests (rather than F & M as previously stated).

Manual

The manual will be sent with any system if it includes a nickel 63 detector, or a detector only when the nickel 63 detector is sent to a customer for field installation on an existing unit. This manual for the cell is generally very similar to the tritium manual, with the following exceptions:

- a) <u>Description of Source</u>. 20 millicuries of Ni63 on gold foil instead of 200 millicuries of tritium.
- <u>Temperature</u>. The maximum operating temperature is now 360°C instead of 225°C.
- c) Life of Foil. This will be extended over the present 1-2 years.
- d) <u>Venting of Cell Effluent</u>. We will suggest the customer vent the cell effluent gas at all times.
- e) Energy Level of Nickel 63. Changed to "Nickel is medium-low energy emitter and as such caution should be used when handling the cell even though the shielding of the source (by the cell, heat sink and outer insulation and container) is sufficient to prevent any hazard from normal handling of the cell." This removes the assumption we made in my letter of July 20, "... isotope is four times more energetic than tritium...", that the customer has knowledge of tritium activity.
- f) <u>Cleaning Procedure</u>. As detailed in letter of August 3 from J. Peters to Mr. J. Bell.

We would also wish to use the new heat sink and container for a large portion of our future shipments of cells 2=2837; 2=2830.

If you have any further questions please call me.

J. Peters Radiation Safety Officer

Mall Section

Very truly yours,

JP:mm